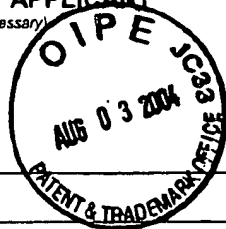


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Application Number	10/789,882
Filing Date	February 27, 2004
First Named Inventor	Farrar, Paul
Group Art Unit	2818
Examiner Name	Unknown D. NGUYEN

Sheet 1 of 1

Attorney Docket No: 303.673US3

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date If Appropriate
dh	US-4,213,818	07/22/1980	Lemons, Kyle E., et al.	438	719	01/04/1979
	US-5,461,243	10/24/1995	Ek, Bruce A., et al.	257	190	10/29/1993
	US-6,120,641	10/19/2000	Stevens, E. Henry, et al.	156	345.22	08/03/1998
	US-6,197,181	03/06/2001	Chen, Linlin	205	123	03/20/1998
	US-6,277,263	08/21/2001	Chen, Linlin	205	182	08/31/1999
	US-6,290,833	09/18/2001	Chen, Linlin	205	182	08/31/1999
	US-6,313,035	11/06/2001	Sandhu, Gurtej S., et al.	438	681	05/31/1996
	US-6,368,966	04/09/2002	Krishnamoorthy, Ahila, et al.	438	687	08/31/1999
	US-6,428,673	08/06/2002	Ritzdorf, Thomas L., et al.	205	84	07/08/2000
	US-6,486,533	11/26/2002	Krishnamoorthy, Ahila, et al.	257	586	11/21/2001
	US-6,508,920	01/21/2003	Ritzdorf, Thomas L., et al.	204	194	08/31/1999
	US-6,565,729	05/20/2003	Chen, Linlin, et al.	205	82	12/07/2000
	US-6,573,182	06/03/2003	Sandhu, Gurtej S., et al.	438	674	09/24/2001
	US-6,632,345	10/14/2003	Chen, L.	205	182	10/23/2000
	US-6,638,410	10/28/2003	Chen, Linlin, et al.	205	182	11/22/2002
	US-6,664,197	12/16/2003	Stevens, E. Henry, et al.	438	754	11/01/2001
dh	US-6,674,169	01/06/2004	Sandhu, Gurtej S., et al.	257	763	09/24/2001

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T ²
dh	EP-0304046	02/22/1989	Fujimura, S., et al.	G03F	7/26	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
dh		NAYAK, D.K., "High performance GeSi quantum-well PMOS on SIMOX", International Electron Devices Meeting 1992. Technical Digest, (1992), 777-80	

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DATE CONSIDERED

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Application Number ~~Unknown~~ 10/789,882Filing Date ~~Even Date Herewith~~ 02/27/04

First Named Inventor Farrar, Paul

Group Art Unit ~~Unknown~~ 2818Examiner Name ~~Unknown~~ D. NGUYEN

Sheet 1 of 10

Attorney Docket No: 303.673US3

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date If Appropriate
dh	US-01/0002333	05/31/2001	Huang, Chao-Yuan , et al.	438	637	03/29/1999
	US-2002/0014646	02/07/2002	Tsu, , et al.	257	296	
	US-2002/0028552	03/07/2002	Lee, , et al.	438	243	
	US-2002/0096768	07/25/2002	Joshi, Rajiv Vasant	257	750	
	US-2002/0109233	08/15/2002	Farrar, Paul A.	257	762	
	US-2,842,438	07/08/1958	Saarivirta, M. J., et al.	75	153	08/02/1956
	US-3,954,570	06/04/1976	Shirk, Albert , et al.	204	15	11/11/1974
	US-4,386,116	05/31/1983	Nair, Krishna K., et al.	427	99	12/24/1981
	US-4,394,223	07/19/1983	Hall, Dean	204	15	10/06/1981
	US-4,423,547	01/03/1984	Farrar, P. A., et al.	29	571	06/01/1981
	US-4,565,157	01/21/1986	Brors, D. L., et al.	118	719	03/29/1983
	US-4,574,095	03/04/1986	Baum, Thomas H., et al.	427	53.1	11/19/1984
	US-4,762,728	08/09/1988	Keyser, T., et al.	427	38	11/26/1985
	US-4,788,082	11/29/1988	Schmitt, Jerome J.	427	248.1	12/12/1985
	US-4,847,111	07/11/1989	Chow, Yu C., et al.	427	38	06/30/1988
	US-4,931,410	06/05/1990	Tokunaga, Takafumi , et al.	437	189	08/25/1988
	US-4,948,459	08/14/1990	Van Laarhoven, , et al.	156	643	01/04/1989
	US-4,962,058	10/09/1990	Cronin, John E., et al.	437	187	04/14/1989
	US-4,996,584	02/26/1991	Young, P. L., et al.	357	71	10/13/1988
	US-5,019,531	05/28/1991	Awaya, N., et al.	437	180	05/19/1989
	US-5,034,799	07/23/1991	Tomita, K., et al.	357	71	02/14/1990
	US-5,084,412	01/28/1992	Nakasaki, Yasushi	437	189	10/01/1990
	US-5,100,499	03/31/1992	Douglas, M. A.	156	635	06/25/1991
	US-5,130,274	07/14/1992	Harper, J. M., et al.	437	195	04/05/1991
	US-5,158,986	10/27/1992	Cha, S. W., et al.	521	82	04/05/1991
	US-5,173,442	12/22/1992	Carey, D. H.	437	173	03/24/1992
	US-5,231,056	07/27/1993	Sandhu, G. S.	437	200	01/15/1992
	US-5,240,878	08/31/1993	Fitzsimmons, J., et al.	437	187	04/26/1991
dh	US-5,243,222	09/07/1993	Harper, J. M., et al.	257	774	01/08/1992

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	Application Number	Unknown <u>10/789,882</u>
	Filing Date	Even Date Herewith <u>02/27/04</u>
	First Named Inventor	Farrar, Paul
	Group Art Unit	Unknown <u>2818</u>
	Examiner Name	Unknown <u>D. NGUYEN</u>
Attorney Docket No: 303.673US3		

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<i>dh</i>	US-5,256,205	10/26/1993	Schmitt III, Jerome J., et al.	118	723	01/07/1992
	US-5,334,356	08/02/1994	Baldwin, D. F., et al.	422	133	08/24/1992
	US-5,354,712	10/11/1994	Ho, Y. Q., et al.	437	195	11/12/1992
	US-5,371,042	12/06/1994	Ong, E.	437	194	06/16/1992
	US-5,384,284	01/24/1995	Doan, T T., et al.	437	190	10/01/1993
	US-5,413,687	05/09/1995	Barton, C. L., et al.	204	192.14	11/27/1991
	US-5,426,330	06/20/1995	Joshi, R. V., et al.	257	752	09/21/1993
	US-5,442,237	08/15/1995	Hughes, Henry G., et al.	257	759	02/04/1994
	US-5,447,887	09/05/1995	Filipiak, Stanley, et al.	437	200	04/01/1994
	US-5,470,789	11/28/1995	Misawa, N.	437	190	03/07/1995
	US-5,470,801	11/28/1995	Kapoor, Ashok K., et al.	437	238	06/28/1993
	US-5,506,449	04/09/1996	Nakano, Tadashi, et al.	257	758	03/23/1994
	US-5,538,922	07/23/1996	Cooper, K J., et al.	437	195	01/25/1995
	US-5,539,060	07/23/1996	Tsunogae, Y., et al.	525	338	10/13/1995
	US-5,595,937	01/21/1997	Mikagi, K.	437	192	04/12/1996
	US-5,609,721	03/11/1997	Tsukune, A., et al.	156	646.1	01/03/1995
	US-5,635,253	06/03/1997	Canaperi, Donald F., et al.	427	437	06/07/1995
	US-5,654,245	08/05/1997	Allen, Gregory L.	438	629	03/23/1993
	US-5,670,420	09/23/1997	Choi, Kyeong K.	437	189	11/08/1995
	US-5,674,787	10/07/1997	Zhao, Bin, et al.	437	230	01/16/1996
	US-5,679,608	10/21/1997	Cheung, Robin W., et al.	437	195	06/05/1995
	US-5,681,441	10/28/1997	Svendsen, Leo G., et al.	205	114	12/22/1992
	US-5,695,810	12/09/1997	Dubin, Valery M., et al.	427	96	11/20/1996
	US-5,719,089	02/17/1998	Cherng, Meng-Jaw, et al.	438	637	06/21/1996
	US-5,719,410	02/17/1998	Suehiro, S., et al.	257	77	12/16/1996
	US-5,739,579	04/14/1998	Chiang, Chien, et al.	257	635	09/10/1996
	US-5,763,953	06/09/1998	Iijima, T., et al.	257	762	01/18/1996
	US-5,780,358	07/14/1998	Zhou, M. S.	438	645	04/08/1996
	US-5,785,570	07/28/1998	Bruni, M. D.	445	52	07/25/1995
	US-5,792,522	08/11/1998	Jin, S., et al.	427	575	09/18/1996
	US-5,801,098	09/01/1998	Fiordalice, R., et al.	438	653	09/03/1996
	US-5,814,557	09/29/1998	Venkatraman, Ramnath, et al.	438	622	05/20/1996
<i>dh</i>	US-5,821,168	10/13/1998	Jain, Ajay	438	692	07/16/1997

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**INFORMATION DISCLOSURE
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Complete if Known

Application Number	Unknown 10/789,882
Filing Date	Even Date Herewith 02/27/04
First Named Inventor	Farrar, Paul
Group Art Unit	Unknown 2818
Examiner Name	Unknown D. NGUYEN

Sheet 3 of 10

Attorney Docket No: 303.673US3

dh	US-5,824,599	10/20/1998	Schacham-Diamond, Yosef, et al.	438	678	01/16/1996
	US-5,858,877	01/12/1999	Dennison, C. H., et al.	438	700	01/21/1997
	US-5,891,797	04/06/1999	Farrar, P. A.	438	619	10/20/1997
	US-5,891,804	04/06/1999	Havemann, R. H., et al.	438	674	04/14/1997
	US-5,895,740	04/20/1999	Chien, Rong-Wu, et al.	430	313	11/13/1996
	US-5,897,370	04/27/1999	Joshi, R. V., et al.	438	632	10/28/1996
	US-5,907,772	05/25/1999	Iwasaki, Haruo	438	253	02/26/1997
	US-5,911,113	06/08/1999	Yao, G., et al.	438	649	03/18/1997
	US-5,925,930	07/20/1999	Farnworth, Warren M., et al.	257	737	05/21/1996
	US-5,930,669	07/27/1999	Uzoh, Cyprian	438	627	04/03/1997
	US-5,932,928	08/03/1999	Clampitt, D. A.	257	758	07/03/1997
	US-5,940,733	08/17/1999	Beinglass, Israel, et al.	438	655	07/29/1997
	US-5,948,467	09/07/1999	Nguyen, T., et al.	427	99	07/24/1998
	US-5,962,923	10/05/1999	Xu, Z., et al.	257	774	08/07/1995
	US-5,972,179	10/26/1999	Chittipeddi, et al.	204	192.17	09/30/1997
	US-5,972,804	10/26/1999	Tobin, Philip J., et al.	438	786	11/03/1997
	US-5,976,710	11/02/1999	Sachdev, K. G., et al.	428	620	04/10/1997
	US-5,981,350	11/09/1999	Geusic, Joseph E., et al.	438	386	05/29/1998
	US-5,985,759	11/16/1999	Kim, E., et al.	438	653	02/24/1998
	US-5,989,623	11/23/1999	Chen, Liang-Yuh, et al.	427	97	08/19/1997
	US-5,994,777	11/30/1999	Farrar, P. A.	257	758	08/26/1998
	US-6,008,117	12/28/1999	Hong, Qi-Zhong, et al.	438	629	03/19/1997
	US-6,015,465	01/18/2000	Kholodenko, A., et al.	118	719	04/08/1998
	US-6,017,820	01/25/2000	Ting, C. H., et al.	438	689	07/17/1998
	US-6,030,877	02/29/2000	Lee, C, et al.	438	381	10/06/1997
	US-6,065,424	05/23/2000	Shacham-Diamond, Y., et al.	118	696	12/18/1996
	US-6,069,068	05/30/2000	Rathore, H. S., et al.	438	628	10/08/1997
	US-6,071,810	06/06/2000	Wada, Junichi, et al.	438	635	12/23/1997
	US-6,100,193	08/08/2000	Suehiro, S., et al.	438	685	09/24/1997
	US-6,126,989	10/03/2000	Robinson, Karl, et al.	427	97	08/26/1998
	US-6,136,095	10/24/2000	Xu, Z., et al.	118	719	10/06/1997
	US-6,139,699	10/31/2000	Chiang, T., et al.	204	192.15	05/27/1997
dh	US-6,140,228	10/31/2000	Shan, E., et al.	438	653	11/13/1997

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DATE CONSIDERED

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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"><i>Complete if Known</i></td> </tr> <tr> <td style="width: 50%;">Application Number</td> <td>Unknown 10/789,882</td> </tr> <tr> <td>Filing Date</td> <td>Even Date Herewith 02/27/04</td> </tr> <tr> <td>First Named Inventor</td> <td>Farrar, Paul</td> </tr> <tr> <td>Group Art Unit</td> <td>Unknown 2818</td> </tr> <tr> <td>Examiner Name</td> <td>Unknown D. NGUYEN</td> </tr> </table>	<i>Complete if Known</i>		Application Number	Unknown 10/789,882	Filing Date	Even Date Herewith 02/27/04	First Named Inventor	Farrar, Paul	Group Art Unit	Unknown 2818	Examiner Name	Unknown D. NGUYEN
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Examiner Name	Unknown D. NGUYEN												
Sheet 4 of 10	Attorney Docket No: 303.673US3												

dh	US-6,140,234	10/31/2000	Uzoh, Cyprian , et al.	438	678	01/20/1998
	US-6,143,646	11/07/2000	Wetzel, J. T.	438	637	06/03/1997
	US-6,150,261	11/21/2000	Hsu, C. , et al.	438	640	05/25/1999
	US-6,153,507	11/28/2000	Mikagi, K.	438	618	01/13/1998
	US-6,159,769	12/12/2000	Farnworth, Warren M., et al.	438	108	01/05/1999
	US-6,171,661	01/09/2001	Zheng, B. , et al.	427	535	02/25/1998
	US-6,177,350	01/23/2001	Sundarrajan, A. , et al.	438	688	04/14/1998
	US-6,183,564	02/06/2001	Reynolds, G. J., et al.	118	719	11/12/1998
	US-6,187,656	02/01/2001	Lu, , et al.	438	592	
	US-6,190,732	02/20/2001	Omstead, , et al.	118	729	
	US-6,197,688	03/06/2001	Simpson, Cindy R.	438	678	02/12/1998
	US-6,207,222	03/27/2001	Chen, Liang-Yuh , et al.	427	97	08/24/1999
	US-6,207,553	05/27/2001	Buynoski, M. , et al.	438	622	01/26/1999
	US-6,207,558	03/27/2001	Singhvi, Shri , et al.	438	648	10/01/1999
	US-6,211,049	04/03/2001	Farrar, Paul A.	438	597	02/24/1999
	US-6,211,073	04/03/2001	Ahn, K. Y.	438	653	02/27/1998
	US-6,221,763	04/24/2001	Gilton, Terry L.	438	643	04/05/1999
	US-6,232,219	05/15/2001	Blalock, , et al.	438	637	05/20/1998
	US-6,249,056	06/19/2001	Kwon, Dong-chul , et al.	257	758	11/01/1999
	US-6,265,311	07/24/2001	Hautala, J J., et al.	438	680	04/27/1999
	US-6,271,592	08/07/2001	Kim, E. , et al.	257	751	08/06/1999
	US-6,284,656	09/04/2001	Farrar, Paul A.	438	687	08/04/1998
	US-6,287,954	09/11/2001	Ashley, L , et al.	438	622	12/09/1999
	US-6,323,553	11/01/2001	Hsu, , et al.	257	751	11/01/2001
	US-6,326,303	12/04/2001	Robinson, Karl , et al.	438	678	02/11/2000
	US-6,359,328	03/01/2002	Dubin,	257	622	
	US-6,372,622	04/16/2002	Tan, , et al.	438	612	10/26/1999
	US-6,376,370	04/23/2002	Farrar, Paul A.	438	678	
	US-6,387,542	05/14/2002	Kozlov, Alexander , et al.	428	673	07/06/2000
	US-6,399,489	06/04/2002	M'Saad, H. , et al.	438	680	11/01/1999
	US-6,403,481	06/11/2002	Matsuda, T. , et al.	438	687	08/10/1999
	US-6,420,262	07/16/2002	Farrar, Paul A.	438	652	01/18/2000
	US-6,426,289	07/30/2002	Farrar, P A.			
dh	US-6,429,120	08/06/2002	Ahn, Kie Y., et al.	438	635	01/18/2000

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	Group Art Unit	Unknown 2818
	Examiner Name	Unknown D. NGUYEN
Sheet 5 of 10		Attorney Docket No: 303.673US3

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T ²
dhc	JP-05160826	03/20/1995	Miyamoto, Ikuo	H01L	21/320 5	
	JP-05267643	10/15/1993	Muraoka, Toru	029	46	
	JP-07-321111	08/12/1995	Tetsuo, K.	H01L	21/320 5	
dhc	JP-07078815	03/20/1995	Miyamoto, I.	H01 L	21/320 5	

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS						
Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T ²
dhc		"Brooks Model 5964 High Performance Metal Seal Mass Flow Controller (Introduced in 1991)", Brooks Instrument, http://www.frco.com/brooks/semiconductor/products1i.html , (1991), 1 page				
		ABE, K., et al., "Sub-half Micron Copper Interconnects Using Reflow of Sputtered Copper Films", <u>VLSI Multilevel Interconnection Conference</u> , (June 25-27, 1995), 308-311				
		AMERICAN SOCIETY FOR METALS, "Properties and Selection: Nonferrous Alloys and Pure Metals", <u>Metals Handbook</u> , 9th ed., vol. 2, Metals Park, Ohio, (1979), Table of Contents				
		ANDRICACOS, P. C., "Copper On-Chip Interconnections", <u>The Electrochemical Society Interface</u> , (1999), 32-37				
		ANONYMOUS, "Formation of Conductors at Variable Depths -- Using Differential Photomask, Projecting Images into Insulator by Reactive Ion Etching, Selectively Filling Images with Conductor", <u>Research Disclosure</u> , Disclosure No. RD 291015, Abstract, (July 10, 1988), 1 page				
		ANONYMOUS, "Improved Metallurgy for Wiring Very Large Scale Integrated Circuits", <u>International Technology Disclosures</u> , 4, Abstract, (1986), 1 page				
		BAE, SANGHOON, et al., "Low-Temperature Deposition Pathways to Silicon Nitride, Amorphous Silicon, Polycrystalline Silicon, and n type Amorphous Silicon Films Using a High Density Plasma System", <u>IEEE Conference Records--- Abstracts, International Conference on Plasma Science</u> , (1997), 315				
		BAI, G., "Copper Interconnection Deposition Techniques and Integration", <u>1996 Symposium on VLSI Technology, Digest of Technical Papers</u> , (1996), 48-49				
		BERNIER, M., et al., "Laser processing of palladium for selective electroless copper plating", <u>SPIE</u> , 2045, (1994), 330-337				
dhc		BHANSALI, S., et al., "A novel technique for fabrication of metallic structures on polyimide by selective electroless copper plating using ion implantation", <u>Thin Solid Films</u> , 270, No. 1/02, (1995), 489-492				

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	First Named Inventor	Farrar, Paul
	Group Art Unit	Unknown 2818
	Examiner Name	Unknown D. NGUYEN
Sheet 6 of 10	Attorney Docket No: 303.673US3	

dh		BHANSALI, S. , et al., "Selective electroless copper plating on silicon seeded by copper ion implantation", <u>Thin Solid Films</u> , 253, (1994),391-394	
		BRAUD, F. , "Ultra Thin Diffusion Barriers for Cu Interconnections at The Gigabit Generation and Beyond", <u>VMIC Conference Proceedings</u> , (1996),174-179	
		CABRERA, A. L., et al., "Oxidation protection for a variety of transition metals and copper via surface silicides formed with silane containing atmospheres", <u>Journal of Materials Research</u> , 6(1), (1991),71-79	
		CRAIG, J. D., "Polyimide Coatings", <u>Packaging, Electronic Materials Handbook</u> , Vol. 1, ASM International Handbook Committee (eds.), ASM International, Materials Park, OH,(1989),767-772	
		DE FELIPE, T. S., et al., "Electrical Stability and Microstructural Evolution in Thin Films of High Conductivity Copper Alloys", <u>Interconnect Technology</u> , 1999. <u>IEEE International Conference</u> , (May 24-26, 1999),293-295	
		DING, "Copper Barrier, Seed Layer and Planarization Technologies", <u>VMIC Conference Proceedings</u> , (1997),87-92	
		DUBIN, V. M., et al., "Selective and Blanket Electroless Copper Deposition for Ultralarge Scale Integration", <u>Journal of the Electrochemical Society</u> , 144(3), (1997),898-908	
		DUSHMAN, S. , et al., <u>Scientific Foundations of Vacuum Technique</u> , 2nd Edition, John Wiley and Sons,(1962),1-806	
		EDELSTEIN, D. , "Full Copper Wiring in a Sub-0.25 micrometer CMOS ULSI Technology", <u>Technical Digest</u> , <u>International Electron Devices Meeting</u> , (December 7-10, 1997),773-776	
		EISENBRAUN, E. T., et al., "Selective and Blanket Low-Temperature Copper CVD for Multilevel Metallization in ULSI", <u>Conference Proceedings ULSI-VII</u> , (1992),5 pages	
		ELDRIDGE, J. M., "New Approaches for Investigating Corrosion in Thin Film Devices", <u>Electronic Packaging and Corrosion in Microelectronics, Proceedings of ASM's Third Conference on Electric Packaging: Materials and Processes & Corrosion in Microelectronics</u> , Mpls, MN,(1987),283-285	
		ERNST, et al., "Growth Model for Metal Films on Oxide Surface: Cu on ZnO(0001)-O", <u>Physical Review B</u> , 47, (May 15, 1993),13782-13796	
		FUKUDA, T. , et al., "0.5 -micrometer-Pitch Copper-Dual-Damascene Metallization Using Organic SOG (k=2.9) for 0.18-micrometer CMOS Applications", <u>Electron Devices Meeting</u> , 1999. <u>IEDM Technical Digest</u> , <u>International</u> , (1999),619-622	
		GLADLFELTER, W. L., et al., "Trimethylamine Complexes of Alane as Precursors for the Low-Pressure Chemical Vapor Deposition of Aluminum", <u>Chemistry of Materials</u> , 1, (1989),pp. 339-343	
dh		GODBEY, D. J., et al., "Copper Diffusion in Organic Polymer Resists and Inter-level Dielectrics", <u>Thin Solid Films</u> , 308-309, (1997),pp. 470-474	

EXAMINER

Neas

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Substitute Disclosure Statement Form (PTO-1449)
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Sheet 7 of 10

Attorney Docket No: 303.673US3

dh	GRIMBLOT, J. , et al., "II. Oxidation of Aluminum Films", <u>J. Electrochem.</u> , 129, (1982),pp. 2369-2372	
	HATTANGADY, S. V., et al., "Integrated processing of silicon oxynitride films by combined plasma and rapid-thermal processing", <u>J. Vac. Sci. Technol. A</u> , 14(6), (1996),pp. 3017-3023	
	HIRAO, S. , et al., "A Novel Copper Reflow Process Using Dual Wetting Layers", <u>Symposium on VLSI Technology, Digest of Technical Papers</u> , (1997),57-58	
	HIRAO, S. , et al., "A Novel Copper Reflow Process Using Dual Wetting Layers", <u>1997 Symposium on VLSI Technology, Digest of Technical Papers</u> , (1997),57-58	
	HIRATA, A. , et al., "WSiN Diffusion Barrier Formed by ECR Plasma Nitridation for Copper Damascene Interconnection", <u>16th Solid State Devices and Materials</u> , (1998),pp. 260-261	
	HOLLOWAY, K. , et al., "Tantalum as a diffusion barrier between copper and silicon", <u>Applied Physics Letters</u> , 57(17), (October 1990),1736-1738	
	HU, C. K., et al., "Extendibility of Cu Damascene to 0.1 micrometer Wide Interconnections", <u>Mat. Res. Soc. Symp. Proc.</u> , 514, (1998),pp. 287-292	
	HYMES, S. , et al., "Passivation of Copper by Silicide Formation in Dilute Silane", <u>Conference Proceedings ULSI-VII</u> , (1992),425-431	
	IJIMA, T. , "Microstructure and Electrical Properties of Amorphous W-Si-N Barrier Layer for Cu Interconnections", <u>1996 VMIC Conference</u> , (1996),168-173	
	IZAKI, M. , et al., "Characterization of Transparent Zinc Oxide Films Prepared by Electrochemical Reaction", <u>Journal of the Electrochemical Society</u> , 144, (June 1997),1949-1952	
	JAYARAJ, K. , "Low Dielectric Constant Microcellular Foams", <u>Proceedings from the Seventh Meeting of the DuPont Symposium on Polyimides in Microelectronics</u> , (September 1996),474-501	
	JEON, Y. , et al., "Low-Temperature Fabrication of Polycrystalline Silicon Thin Films by ECR Pecvd", <u>The Electrochemical Society Proceedings</u> , 94(35), (1995),103-114	
	JIN, C. , et al., "Porous Xerogel Films as Ultra-low Permittivity Dielectrics for ULSI Interconnect Applications", <u>Conference Proceedings ULSI XII - 1997 Materials Research Society</u> , (1997),463-469	
	KALOYEROS, A. E., et al., "Blanket and Selective Copper CVD from Cu(FOD)2 for Multilayer Metallization", <u>Mat. Res. Soc. Symp. Proc.</u> , Vol. 181,(1990),6 pages	
	KAMINS, T. I., "Structure and Properties of LPCVD Silicon Films", <u>J. Electrochem. Soc.: Solid-State Science and Technology</u> , 127, (March 1980),pp. 686-690	
	KANG, H. K., et al., "Grain Structure and Electromigration Properties of CVD CU Metallization", <u>Proceedings of the 10th International VLSI Multilevel Interconnection Conference</u> , (June 8-9, 1993),223-229	
dh	KEPPNER, H. , et al., "The "Micromorph" Cell: A New Way to High-Efficiency-Low-Temperature Crystalline Silicon Thin-Film Cell Manufacturing", <u>Mat. Res. Soc. Symp. Proc.</u> , 452, (1997),pp. 865-876	

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Substitute Disclosure Statement Form (PTO-1449)

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Sheet 8 of 10	Attorney Docket No: 303.673US3	

dlm		KIANG, M. , et al., "Pd/Si plasma immersion ion implantation for selective electroless copper plating on SiO ₂ ", <u>Applied Physics Letters</u> , 60, (1992),2767-2769	
		KIRK, RAYMOND E., <u>Kirk-Othmer Concise Encyclopedia of Chemical Technology</u> , Grayson, M., (ed.), John Wiley & Sons, Inc., New York, NY,(1985),433-435, 926-938	
		KISTIAKOWSKY, G. B., et al., "Reactions of Nitrogen Atoms. I. Oxygen and Oxides of Nitrogen", <u>The Journal of Chemical Physics</u> , 27(5), (1957),pp. 1141-1149	
		KLAUS, J W., et al., "Atomic Layer Deposition of Tungsten Nitride Films Using Sequential Surface Reactions", <u>Journal of the Electrochemical Society</u> , vol.147, no.3, (March 2000),1175-1181	
		LAURSEN, T. , "Encapsulation of Copper by Nitridation of Cu-Ti Alloy/Bilayer Structures", <u>International Conference on Metallurgical Coatings and Thin Films</u> , Abstract No. H1.03, San Diego, CA,(April 1997),309	
		LEN, V. , et al., "An investigation into the performance of diffusion barrier materials against copper diffusion using metal-oxide-semiconductor (MOS) capacitor structures", <u>Solid-State Electronics</u> , 43, (1999),pp. 1045-1049	
		LYMAN, T. , et al., "Metallography, Structures and Phase Diagrams", <u>Metals Handbook</u> , 8, American Society for Metals, Metals Park, Ohio,(1989),pgs. 300 & 302	
		MARCADAL, C. , "OMCVD Copper Process for Dual Damascene Metallization", <u>VMIC Conference, ISMIC</u> ,(1997),pp. 93-97	
		MILLER, R. D., "Low Dielectric Constant Polyimides and Polyimide Nanofoams", <u>Seventh Meeting of the DuPont Symposium on Polyimides in Microelectronics</u> , (September 1996),pp. 443-473	
		MIN, JAE-SIK , et al., "Metal-Organic Atomic-Layer Deposition of Titanium-Silicon-Nitride Films", <u>Applied Physics Letters</u> , 75(11), (1999),1521-1523	
		MIYAKE, T. , et al., "Atomic Hydrogen Enhanced Reflow of Copper", <u>Applied Physics Letters</u> , 70(10), (1997),1239-1241	
		MURARKA, S. P., et al., "Copper Interconnection Schemes: Elimination of The Need of Diffusion Barrier/Adhesion Promoter by the Use of Corrosion Resistant, Low Resistivity Doped Copper", <u>SPIE</u> , 2335, (1994),pp. 80-90	
		NAKAO, S. , et al., "Thin and Low-Resistivity Tantalum Nitride Diffusion Barrier and Giant-Grain Copper Interconnects for Advanced ULSI Metallization", <u>Japanese Journal of Applied Physics</u> , 38(4B), (April 1999),pgs. 262-263	
		NEWBOE, B. , et al., "Applied Materials Announces First Barrier/Seed Layer System For Copper Interconnects", <u>Applied Materials</u> , http://www.appliedmaterials.com/newsroom/pr-00103.html , (1997),pgs. 1-4	
dlm		OKAMOTO, Y. , et al., "Magnetically Excited Plasma Oxynitridation of Si at Room Temperature", <u>Japanese Journal of Applied Physics</u> , 34, (1995),L955-957	

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Sheet 9 of 10

Attorney Docket No: 303.673US3

dh	PALLEAU, J., et al., "Refractory Metal Encapsulation in Copper Wiring", <u>Advanced Metallization for Devices and Circuits-Science, Technology and Manufacturability</u> , Materials Research Society Symposium Proceedings, 337, (April 1994),225 - 231	
	PARK, C. W., et al., "Activation Energy for Electromigration in Cu Films", <u>Applied Physics Letters</u> , 59(2), (July 6, 1991),175-177	
	RADZIMSKI, Z. J., et al., "Directional Copper Deposition using d-c Magnetron Self-sputtering", <u>J. Vac. Sci. Technol. B</u> , 16(3), (1998),pp. 1102-1106	
	RAMOS, T., et al., "Nanoporous Silica for Dielectric Constant Less Than 2", <u>Conference Proceedings ULSI XII - 1997 Materials Research Society</u> , (1997),455-461	
	RATH, J. K., et al., "Low-Temperature deposition of polycrystalline silicon thin films by hot-wire CVD", <u>Solar Energy Materials and Solar Cells</u> , 48, (1997),pp. 269-277	
	RAY, S. K., et al., "Flourine-enhanced nitridation of silicon at low temperatures in a microwave plasma", <u>J. Appl. Phys.</u> , 70(3), (1991),pp. 1874-1876	
	ROSSNAGEL, S. M., "Magnetron Sputter Deposition of Interconnect Applications", <u>Conference Proceedings, ULSI XI</u> , (1996),227-232	
	ROSSNAGEL, S. M., et al., "Metal ion deposition from ionized magnetron sputtering discharge", <u>J. Vac. Sci. Technol. B</u> , 12(1), (1994),pp. 449-453	
	RYAN, J. G., "Copper Interconnects for Advanced Logic and DRAM", <u>Extended Abstracts of the 1998 International Conference on Solid-State Devices and Materials</u> , Hiroshima, (1998),pp. 258-259	
	RYU, C., et al., "Barriers for copper interconnections", <u>Solid State Technology</u> , (April 1999),pp. 53,54,56	
	SAARIVIRTA, M. J., "High Conductivity Copper Rich Cu-Zr Alloys", <u>Transactions of the Metallurgical Society of AIME</u> , 218, (1960),431-437	
	SENZAKI, Y., "Chemical Vapor Deposition of Copper using a New Liquid Precursor with Improved Thermal Stability", <u>Conference Proceedings ULSI XIII, Materials Research Society</u> , (1998),pp. 451-455	
	SHACHAM-DIAMAND, Y., "100 nm Wide Copper Lines Made by Selective Electroless Deposition", <u>Journal of Micromechanics and Microengineering</u> , 1, (March 1991),66-72	
	SHACHAM-DIAMAND, YOSI, et al., "Copper electroless deposition technology for ultra-large-scale-intergration (ULSI) metallization", <u>Microelectronic Engineering, NL</u> , Vol. 33, No. 1, XP004054497, (1997),47-58	
	SRIVATSA, A. R., et al., "Jet Vapor Deposition: an Alternative to Electrodeposition", <u>Surface Engineering</u> , 11, (1995),75-77	
	STROUD, P. T., et al., "Preferential deposition of silver induced by low energy gold ion implantation", <u>Thin Solid Films, Switzerland</u> , Vol. 9, No. 2, XP000993098, (Feb. 1972),273-281	
dh	TAO, J., et al., "Electromigration Characteristics of Copper Interconnects", <u>IEEE Electron Devices Letters</u> , 14(5), (May 1993),249-251	

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Theao

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Sheet 10 of 10

Attorney Docket No: 303.673US3

dlr		TING, C. H., "Methods and Needs for Low K Material Research", <u>Materials Research Society Symposium Proceedings, Volume 381, Low-Dielectric Constant Materials – Synthesis and Applications in Microelectronics</u> , Lu, T.M., et al., (eds.), San Francisco, CA, (April 17-19, 1995), 3-17	
		TSUKADA, T., et al., "Adhesion of copper films on ABS polymers deposited in an internal magnet magnetron sputtering system", <u>J. Vac. Sci. Technol.</u> , 16(2), (1979), 348-351	
		VAN VLACK, LAWRENCE H., "Elements of Materials Science", <u>Addison-Wesley Publishing Co., Inc. Reading, MA</u> , (1959), 468	
		VENKATESAN, S., et al., "A High Performance 1.8V, 0.20 micrometer CMOS Technology with Copper Metalization", <u>Electron Devices Meeting, 1997. Technical Digest., International, (December 7-10, 1997)</u> , 769-772	
		VOSEN, J. L., et al., <u>Thin Film Processes II</u> , Academic Press, Inc., (1991), 1-866	
		WANG, X. W., et al., "Highly Reliable Silicon Nitride Thin Films Made by Jet Vapor Deposition", <u>Japanese Journal of Applied Physics, Vol. 34, Part 1, No. 2B</u> , (February 1995), 955-958	
		WANG, K., et al., "Very Low Temperature Deposition of Polycrystalline Silicon Films with Micro-Meter-Order Grains on SiO ₂ ", <u>Mat. Res. Soc. Symp. Proc.</u> , 355, (1995), pp. 581-586	
		WINTERS, H. F., et al., "Influence of Surface Absorption Characteristics on Reactivity Sputtered Films Grown in the Biased and Unbiased Modes", <u>J. Appl. Phys.</u> , 43(3), (1972), pp. 794-799	
		WOLF, S., et al., <u>Silicon Processing for the VLSI Era, Vol. 1 -- Process Technology</u> , Lattice Press, Sunset Beach, CA, (1986), 514-538	
		WOLF, S., "Chapter 4: Multilevel-Interconnect Technology for VLSI and ULSI", <u>Silicon Processing for the VLSI Era, Vol. 2 Process Integration</u> , Lattice Press, Sunset Beach, CA, (1990), 176-297	
		YEH, J. L., et al., "Selective Copper plating of Polysilicon Surface Micromachined Structures", <u>Solid-State Sensor and Actuator Workshop</u> , (1998), pp. 248-251	
dlr		ZHANG, J., et al., "Investigations of photo-induced decomposition of palladium acetate for electroless copper plating", <u>Thin Solid Films</u> , 318, (1998), pp. 234-238	

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